**Case Study: Newnham Gaming Inc.**

Newnham Gaming’s customer base in North America has grown steadily because of its Role Playing Games ([RPG](https://en.wikipedia.org/wiki/Role-playing_game), not [IBM RPG](https://en.wikipedia.org/wiki/IBM_RPG), a mistake commonly made by old, grey-haired programmers). Their most popular is the Action-RPG “**Gaia – The Untamed**”. Their business has been run using Windows 10 desktops connected in a workgroup (Microsoft’s peer-to-peer local area network). They use Epic Games Unreal Engine and AutoDesk 3D Studio Max for the development of their games. The company has 117 employees.

Most gaming companies have made the transition to [MMORPG](https://en.wikipedia.org/wiki/Massively_multiplayer_online_role-playing_game) online games which have become increasingly sophisticated due to the growth in ICT capabilities. The rise of GPUs has put relatively affordable super computing power into the PCs of serious gamers.

The COVID-19 pandemic has increased demand for in-home entertainment. Broadband fibre (close) to the end user ([FTTH](https://en.wikipedia.org/wiki/Fiber_to_the_x)) with higher speed, lower latency, and better communications quality is now available to most urban homes. Casual gamers, unwilling or unable to have a ‘gaming PC’ (e.g. tablet users and those who bought a MacBook Pro and consequently cannot afford the eGPU to go with it), present an untapped market opportunity by leveraging improved ICT infrastructure with cloud computing to supplant end users’ high-performance client platforms.

The first Newnham game to be migrated to cloud for online delivery/streaming is their most popular: **Gaia**.

The company’s investors have rejected the capital-intensive option to setup their own cloud infrastructure as other Canadian companies like Shopify have done. Instead, their strategy is to use cloud services but they do not know the level of service needed for a [functional area](https://www.startpage.com/do/dsearch?query=functional+area), or the combination of services they need: [IaaS](https://en.wikipedia.org/wiki/Infrastructure_as_a_service), [PaaS](https://en.wikipedia.org/wiki/Platform_as_a_service), or [SaaS](https://en.wikipedia.org/wiki/Software_as_a_service). Each has its advantages and disadvantages for gaming development and deployment. Although some programming may continue to be done at Newnham, a LAN with PCs cannot simulate implementation and deployment in a cloud environment. A LAN with PCs *may* continue to be appropriate for the use of MS Office and other [back office](https://www.startpage.com/do/dsearch?query=%22back+office%22) functions.

They need a business proposal from your ICT consulting company to address their needs as a result of moving their game to the cloud.

* Game Development
* Game Server Hosting
  + Low Latency
  + Low Match Start Time (“spin up” or “spool up” of game streaming services)
* Computing
  + worldwide [scalability](https://en.wikipedia.org/wiki/Scalability)
  + Session-based multiplayer games
  + Dynamic pushing of notifications
* Databases
  + Players Inventory
  + User data storage
  + Leaderboard building
* Game Analytics Pipeline
* Machine Learning
  + Virtual Voice Actors
  + Fraud Detection

There is an overall budget of $150,000 for the Newnham Game Streaming project. That budget covers…

* Your consulting company’s services in leading the first part of the SDLC to
  + determine the detailed business requirements which define Newnham Gaming’s problem: migrate their game development and streaming delivery to the cloud
  + design a workable solution to that problem
  + coordinate the implementation of the solution.

That solution will address the following which is not an exhaustive list of issues.

* Migration and porting of the Gaia code base to the cloud environment
* set up of version control for the gaming code base
* migration of data (e.g. images, models, wireframes, game assets, source code, and perhaps MS Office files) to the cloud.
* training of Newnham employees with new roles in managing and using the cloud environment at one or more \_\_aaS levels
* Each employee (programmer, designer, administrator, clerical) will
* be trained to use tools in the new cloud environment
* have access to the new cloud content

Note that ICT deployments affecting business operations always take place outside normal business hours, i.e. on evenings and weekends. Although, because Newnham *is* a gaming company, “normal business hours” can be a fluid concept.

Your consulting company is creating a [**proposal**](https://blog.mavenlink.com/what-is-a-project-proposal-and-why-is-it-important) to Newnham for the purpose of winning the contract to do their Game Streaming project. See these links for what a proposal [is not](https://www.proposalworks.com/proposal-writing-tips/purpose) and what it [contains](http://writing2.richmond.edu/writing/wweb/business/proposals.html). There are other documents explaining other aspects of completing the Final Project for the course.